

LITERATURE STUDY: APPLICATION OF DIFFERENTIATION LEARNING IN IMPROVING LITERACY AND NUMERACY OF ELEMENTARY SCHOOL STUDENTS

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ABSTRAK

Basic education serves as a crucial foundation in individual and societal development. Within the context of the independent curriculum, literacy and numeracy emerge as primary focuses. Enhancing literacy and numeracy stands as a key to providing a sturdy groundwork for individual development. However, results from PISA indicate that literacy and numeracy achievements in Indonesia still require improvement. Differentiated learning emerges as an effective strategy in enhancing students' literacy and numeracy skills by considering the needs and diversity of learners. Research findings demonstrate that differentiated learning can enhance student activity, learning outcomes, motivation, and inclusivity within the classroom. Statistical analyses further corroborate the effectiveness of differentiated learning in enhancing student capabilities. Therefore, differentiated learning warrants implementation as part of efforts to enhance educational quality at the primary school level.

Keywords: Differentiated learning, literacy, numeracy.

INTRODUCTION

Basic education is an important foundation in the development of individuals and communities. In the context of an independent curriculum, literacy and numeracy are the main footholds. The independent curriculum recognizes the importance of mastering reading, writing, and numeracy skills as a strong foundation for the progress of students. Literacy and numeracy are the ability to manage information to develop knowledge so as to improve self-quality and increase the ability to obtain various insights and new information in order to increase quality human resources (Latifah et al., 2023; Rubingah et al., 2023; Suryana & Delfia, 2020).

The results of the *Program for International Student Assessment* (PISA) show that the literacy and numeracy of students in Indonesia still have achievements that need to be improved. Although there is a ranking progress from 2022 of five to six positions compared to 2018, there is a significant gap between the literacy and numeracy achievements of Indonesian students and other countries in the world (PISA, 2023). Therefore, a teaching approach is needed that is able to meet the literacy and numeracy

needs of each student. This approach can be a differentiated learning approach. Differentiated learning is a process that accommodates the learning needs of students by paying attention to student diversity and responding based on individual differences (Fauzia & Hadikusuma Ramadan, 2023; Fitriyah & Bisri, 2023; Pitaloka & Arsanti, 2022).

The application of differentiated learning involves mapping interests, readiness to learn, and learning styles or profiles of learners. The mapping of students' interests illustrates that each individual has unique potentials and talents that are influenced by his experience and level of thinking maturity. Learning readiness mapping refers not only to the level of intellectual intelligence (IQ), but also to the understanding of knowledge and skills that students have as a basis for learning new material. In addition, mapping based on student profiles or learning styles recognizes the diversity and uniqueness of each individual, such as auditory, visual, or kinesthetic learning styles (Bendriyanti et al., 2022; Fitriyah & Bisri, 2023; Gusteti & Neviyarni, 2022).

Learning is designed to enable the optimization of the development of different potentials or competencies of each class of students through diversification of content, processes, products, and learning environments to be developed (Saputra & Marlina, 2020). Content refers to material delivered by teachers or learned by learners. Process refers to activities carried out by students during classroom learning, which have learning objectives and are relevant to the material being studied, with qualitative assessments to identify areas of development needed by students. Products in this context are learning outcomes that demonstrate learners' knowledge, skills, and understanding abilities after completing a lesson unit. The learning environment includes personal, social, and physical aspects of the classroom, which must be tailored to the readiness, interests, and learning profile of students in order to increase their learning motivation.

Teachers as implementers of learning need to be able to recognize the uniqueness of each student, realizing that they have different abilities, intelligence, skills, and dreams. Literacy and numeracy are not just limited to one lesson, but can also be found in other lessons. Using differentiated learning, teachers can provide assistance that suits the needs of each student, so as to increase their motivation, engagement, and learning achievement (Kurniasandi et al., 2023; Siagian et al., 2022). Differentiated learning also suits the needs of students in this age of globalization, which demands that they have the appropriate skills and abilities. This approach can help students develop critical, creative, collaborative, and communicative thinking skills (Azis et al., 2022). In addition, differentiated learning also promotes attitudes of tolerance, respect for diversity, and inclusivity (Nadhiroh & Ahmadi, 2024).

Based on research on differentiated learning, it does not include specific information about literacy and numeracy in elementary school students. Therefore, systematic research is needed to learn more about differentiated learning in improving literacy and numeracy of elementary school students.

METHOD

This research adopts a literature approach as a data collection method, which is based on the analysis of the main documents of scientific journals relevant to the research topic. By evaluating a variety of reliable sources, researchers can come up with valid and useful conclusions. This research is classified as qualitative, where this research is based

on an interpretation and deep understanding of various technical methods used in the data analysis process (Sugiyono, 2019).

RESULTS AND DISCUSSION

A search for journal articles from Google Scholar obtained 20 articles when searching with the keyword Differentiation Learning, then filtered again with literacy and numeracy keywords obtained 10 articles, until the remaining 5 articles were filtered using the keyword Elementary School.

Descriptive ualitative research conducted by Indah L & Hamdu (2022), on the application of differentiated learning through STAR is a new strategy in strengthening literacy activities at various stages of learning at SDN Kleco II Surakarta. The goal is to improve students' understanding of reading material and numbers. Before using this approach, few students were able to understand the content of the reading and the concept of numeracy. However, after implementing this strategy, namely by mapping, selecting, and compiling reading materials and numbers according to the needs and abilities of students, there was a significant increase in their literacy and numeracy skills.

Qualitative research with a descriptive method entitled "Differentiated Learning Strategies to Improve Students' Reading Comprehension Literacy Skills" conducted by Suratimah (2023) explained that the application of differentiated learning strategies begins with mapping students' reading skills and selecting reading books according to their abilities. Through routine reading activities for 15 minutes before learning begins, students are given the opportunity to get used to reading regularly. This practical experience shows that with an appropriate approach, students respond positively to learning, and their comprehension of reading improves significantly. It is evident from the increase in the percentage of students who understand the content of the reading, from initially only 5 students (18.5%) to 24 students (88%), as well as from a total of 27 students who are able to understand the content of the reading, can answer questions.

Qualitative research with a descriptive method entitled "Differentiated Learning Strategies to Improve Student Comprehension Reading Literacy Skills" by Pratama (2022), explained that the application of differentiated learning has a significant positive impact in improving literacy skills, especially in students' reading comprehension. This approach allows mapping and selection of reading materials that suit students' needs and abilities, resulting in improved reading skills and comprehension of reading content. In addition, differentiated learning also improves students' reading power, reflected by active participation and concentration in longer reading activities. Evaluations show that students become more fluent in reading, can respond to questions about the content of books, and can present reviews or presentations about their reading.

The development research entitled "Development of Differentiated Learning to Improve Numeracy Ability of SDN Bulukerto 01 Batu Students" by Asiyah (2023), explained that differentiated learning is an effective strategy in improving literacy skills, especially numeracy literacy, in grade 1 students of SDN Bulukerto 01. The results of the trial showed that students felt they gained new experience and skills after participating in this learning. Based on the analysis of expert validation results and trial results, an average respondent assessment score of 84.7% was obtained. This shows that the quality of differentiated learning development products to improve the numeracy ability of SDN Bulukerto 01 Kota Batu students is included in the good category.

Quantitative experimental research entitled *Effectiveness of Differentiated Learning in Improving Literacy and Numeracy of Primary School Students* written by Indrawatiningsih & Qomariyah (2024), emphasizes that Based on the results of research and discussion, it can be concluded that differentiated learning activities that have been carried out can improve students' literacy and numeracy skills. This can be seen from the results of the t test which shows that literacy skills obtain a significance value = 0.04452 and numeracy skills obtain a significance value = 0.000938 with $\alpha = 0.05$. Based on the testing criteria, a significance value of < 0.05 means that differentiated learning can improve students' literacy and numeracy skills. In addition, the average score of the post test results of literacy ability was 73,611. While the average score of the post test results of numeracy skills is 70.277 so that the average normalized gain results with a literacy ability value of 0.53 and a numeracy ability value of 0.58 means that the increase in ability is included in the medium category.

Based on the literature, it illustrates that differentiated learning has a significant impact on improving students' literacy and numeracy skills. Various differentiated learning methods and strategies, such as STAR (Mapping, Selection, and Preparation of Reading Material Strategies), mapping students' reading skills, and selection of appropriate reading materials, have proven effective in strengthening literacy activities at various stages of learning. Before the implementation of this strategy, few students were able to understand the content of the reading and the concept of numeracy. However, after the implementation of differentiated learning, there was a significant improvement in their literacy and numeracy skills. Practical experience in differentiated learning shows that students respond positively to learning, with an increase in the percentage of students who understand striking reading content. Evaluation of quantitative experimental research results also supports this finding, by showing a significant increase in students' literacy and numeracy skills, as evidenced by supportive significance scores and increased post-test scores and normalized gain indicating an increase in students' abilities in the moderate category. Thus, differentiated learning can be considered as an effective strategy in improving students' literacy and numeracy skills.

CONCLUSION

Based on the systematic results of various studies conducted, it can be concluded that differentiated learning is effective in improving students' literacy and numeracy skills. The learning products developed have a significant impact on activities, learning outcomes, student morale, and inclusiveness in the classroom. This learning strategy proves its effectiveness through various steps, such as mapping student abilities, selecting appropriate reading materials, and evaluating supporters. Statistical analysis also confirmed that a significant improvement in students' abilities occurred after the application of differentiated learning. Therefore, differentiated learning deserves to be applied as part of efforts to improve the quality of education at the elementary school level.

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